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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/084,869	03/01/2002	Quinn K. Tong	1988.EEM	7273

7590 08/19/2004
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EXAMINER

BUTTNER, DAVID J

ART UNIT	PAPER NUMBER
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1712

DATE MAILED: 08/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/084,869

Applicant(s)

TONG ET AL.

Examiner

David Buttner

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 June 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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The indicated allowability of claims 7, 8, 13, and 22 are withdrawn in view of the newly discovered reference(s) to Shi. Rejections based on the newly cited reference(s) follow.

Claim 15 objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. A fluxing agent was already required.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 2-10, 12, 13, 16-19, 22, 23, 30 and 31 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 3's "bisphenol A resin" and "bisphenol F resin" are not thermally curable without some other groups present.

Claim 7 and 31's "pyrometillic" is an unknown structure.

Claim 12 and 13's "propylene glycol methyl ethyl acetate" is an unknown compound to the examiner. Applicant's response must provide a reference to show the formula for this compound.

Claim 16's "such as" is improper. Are polyols limited to the named polyols or not?

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"Selected from the group comprising" is not proper Markush language in claims 2, 6, 12, 13, 16, 22, 24 and 30.

Claims 23 is directed to an encapsulant (i.e. a composition), but goes on to describe some substrate wafer. Is the claim a coated article or a composition?

The Markush group of anhydrides in claims 6 and 30 include compounds that are not anhydrides.

Claims 1-6, 9-12 and 14-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Shi '896 Patent in view of DD 218377 or J07224153.

Shi discloses underfill material for flip chips (abstract). The material contains epoxy, hardener such as anhydride, curing catalyst, fluxing agent, solvent and surfactant (col. 3 line 11-35). The catalyst can be imidazole and its derivatives (col. 3 line 20). Shi does not suggest using an imidazole-anhydride adduct.

Imidazole-anhydride adducts have good storage stability (see DD218377 and J07224153).

It would have been obvious to use a Imidazole-anhydride adduct as Shi's catalyst because Shi calls for both imidazoles and anhydrides in his composition. The adduct will avoid premature cure.

Claims 1-6 and 9-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Shi '896 Patent in view of DD 218377 or J07224153 in further view of Gilleo '776.

Shi/DD'377/J'153 as discussed above does not suggest applicant's preferred solvent.

Gilleo (col. 8 line 32, 45) shows similar underfill material can be solvated with methoxypropyl acetate.

It would have been obvious to use any common solvent in Shi's underfill material. The solvent has no significant effect on the final article.

Claims 1-6, 9-12 and 14-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Shi '896 Patent in view of DD 218377 or J07224153 in further view of Konarski '472.

Shi /DD'377/J'153 as discussed above suggests epoxy diluents (col. 5 line 55 of Shi) but doesn't name applicant's preferred diluents.

Konarski (col 8 line 20-38) lists epoxy diluents for similar underfill compositions.

It would have been obvious to use any common epoxy diluent as the diluent called for by Shi.

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-31 provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-39 of

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compending Application No. 10-084873. Although the conflicting claims are not identical, they are not patentably distinct from each other because the current claims mirror that of the compending application with the exception that a phenol is not required. The current claims are broader than that of the compending application.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Applicant's arguments filed 6/28/04 have been fully considered but they are not persuasive. The previous rejection is withdrawn in favor of the superior rejections applied above.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Buttner whose telephone number is (571) 272-1084. The examiner can normally be reached on Weekdays from 10:00 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on (571) 272-1302. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DAVID J. BUTTNER
PRIMARY EXAMINER

D. Buttner/af
August 18, 2004

A handwritten signature in cursive script, appearing to read "David Buttner", is written over the printed name and title.